



Deployment and Operational Requirements of 5G Non-Public Networks

ATIS-I-0000091 | June 2022



Abstract

Support for Non-Public Networks (NPN) is a valuable addition to 5G in 3GPP Release 16. This white paper surveys and identifies services and capabilities inherent in public mobile networks that are not currently specified in detail by 3GPP for NPNs. Many of these services and capabilities relate to:

- Providing service continuity outside the NPN footprint, such as roaming.
- Interworking with other public and NPNs, such as robocalling protection for voice calls.

This white paper identifies enhancements that may be developed for NPNs to provide similar services and capabilities to those available in public networks.

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1. Introduction

NPN support is arguably the most significant feature added to 5G in 3GPP Release 16 [1]. Prior to 5G, 3GPP networks were developed primarily for public communication services by commercial service providers. 3GPP expanded 5G utility by adding support for NPNs, which are intended for use in many private network settings and vertical sectors.

The impetus for this white paper is to collect information from vertical sectors that are considering 5G NPN deployments.

To understand the NPN use cases, this white paper also assesses technical solutions based on 3GPP specifications, which have developed extensive supporting services and activities to meet public network deployment and operational requirements. This information is meant to be useful in identifying:

- Possible requirements for inclusion in solution roadmaps for operators and vendors.
- Possible topics for future specification in 3GPP or other organizations.